



# STRATEGIC PLAN FOR INFORMATION SYSTEMS MANAGEMENT

**UPDATE FY-83**



**THE  
FRAMEWORK**

**Update FY-83**

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STRATEGIC PLAN FOR INFORMATION SYSTEMS MANAGEMENT

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BUREAU OF LAND MANAGEMENT

Office of Data Systems

Denver Service Center

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# TABLE OF CONTENTS

	Page
I. INTRODUCTION.....	1
A. Goals	
B. What is Strategic Planning?	
II. BACKGROUND.....	4
A. 1976 Strategic Plan	
B. Status	
C. Need for an Update	
D. How the Update Was Developed	
E. Organization of the Update	
III. SIGNIFICANT DIFFERENCES - THE CURRENT PLAN VERSUS THE 1976 PLAN...	8
IV. THE INFORMATION SYSTEMS PROGRAM ENVIRONMENT.....	10
A. ADP Management	
B. Telecommunications	
C. Remote Sensing/Graphics	
D. Records Systems	
V. ISSUES.....	14
A. Easy to Use Systems	
B. Local Capabilities	
C. Standard Versus Nonstandard Systems	
D. Contrast in Needs	
E. Pursuit of Realistic Goals and Objectives	
F. Awareness of the Information Systems Program	
G. Skills and Training	
H. Resistance to Change	
I. ADP Systems Problems and Recognized Needs	
J. Accessibility of Data	
K. Establishing Priorities	
VI. STRATEGIES TO RESOLVE ISSUES.....	21
A. Management Philosophy	
B. The Broker Function	
C. Problem Identification and Determination of Workload Priorities	
D. Organization	
E. Roles and Responsibilities	
F. Required Structure	
VII. OUTLOOK.....	31

Supplement 1 - Description of Application Packages

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## I. INTRODUCTION

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This is the final version of the FY 1983 updated Strategic Plan for Information Systems Management. This document is intended to serve as an update to the 1976 document (Strategic Plan for Information Systems Management Vol. I, The Framework), not to replace it in full. The reader should refer to the 1976 document for a more complete perspective of the Strategic Plan for Information Systems Management. This plan will provide policy guidance for specific tactical planning and management of the Bureau's information systems. Its provisions will also be blended into the WO Division of Information Systems planning process to assure responsiveness to BLM priority needs in the short and long term. The scope of the plan covers automated and manual information processes in all activities/programs of the Bureau. The information systems planning process will provide for annual updates of critical components of the Bureau information systems program. Strategic planning for information systems will be incorporated into this process.

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### A. Goals

The goals identified in the 1976 Strategic Plan document are for the most part current. These are as follows:

- Provide the Bureau with manual as well as automated information systems that reduce the amount of work-hours required to gather, store, process and retrieve information.
- Make information more timely, accurate, readily available and usable.
- Provide easy-to-use automated systems capabilities and make them available to users at their locations.
- Reduce the amount of space required to store records and the possibilities for lost records.



## B. What Is Strategic Planning?

The purpose of planning is to design a desired future and identify ways to bring it about. The principal benefit inherent in planning is that it permits the organization to exercise a favorable influence on future events. Strategic planning for information systems assures that the organization will be in a position to respond to existing priorities and emerging program thrusts while taking advantage of emerging equipment and software technology in satisfying requirements throughout the planning period. It is concerned with establishing objectives, deciding on resources needed to attain them, and setting policies to govern the acquisition, use, disposition and control of the resources.

Ideally, strategic planning for information systems must coordinate answers to three questions:

- What are the organization's long range goals and policies?
- What changes will take place in the environment in which the organization must operate (social, political, economic and resource)?
- What is the computer technology going to be like over the planning period?

Potential benefits to the Bureau's various management levels for development of planning of this nature are that it provides:

- An evaluation of the effectiveness of current information systems.
- A defined, logical approach to aid in solving management control problems.
- An assessment of future information systems needs based on the Bureau's identified priorities.
- A planned approach that can allow an early return on information systems investment.
- Information systems that are relatively independent of organization structure.
- Confidence that the information systems direction and adequate management attention exist to implement the proposed systems.

There are a number of information systems issues currently facing the Bureau with an even greater number of ways to resolve them. These ways to resolve key issues often are not immediately visible. The purpose of a strategic plan is to identify these issues, seek solutions and resolve the issues in a planned manner. The way to resolve all issues may not be clear to us now, hence strategic planning.

The 1976 Strategic Plan document was a pioneer effort to provide strategic planning for information systems management to the Bureau. The 1976 Plan as well as this update document are an attempt to provide answers to as many of the above questions as possible. It is recognized that neither the 1976 plan nor this update provide full answers to all of the questions.

As the Information Systems planning process becomes operational it is expected that a more comprehensive strategic planning document will evolve since this process includes active participation of information systems managers throughout the Bureau. Currently, it is expected that an Information Systems Planning Document (ISPD) will be the result of this process. That document is intended to address existing strategies, their corresponding baseline funding, issues and projects relative to ADP, Remote Sensing and Graphics, Telecommunications and Records Systems. A final version of the ISPD is anticipated in FY83.

## II. BACKGROUND

### A. 1976 Strategic Plan

The Strategic Plan for Information Systems Management (1976) was developed because the Bureau recognized the need for a guiding strategy or plan for development of information systems requirements, the management of data, and the acquisition of the necessary equipment. The 1976 plan provided the basic framework for activities related to the design, development, test and implementation of automated and manual systems to more effectively manage and use the Bureau's ever increasing quantities of information. This plan defined fifteen application package areas as representative of the Bureau's fundamental work processes and arranged these into a priority sequence of development (since then, this list of application packages was reduced from fifteen to fourteen through the combining of two packages and some reprioritizing has occurred-see Section C - Need For An Update). A very basic approach for design, development, test and implementation of each of the fifteen application packages was included in the plan. A brief description of each of these application packages is included in supplement 1 of this update document.

The 1976 plan recommended a centralized method for the conduct of most information systems development activities which means that most systems development and equipment acquisition activities were to take place at the Service Center (SC) with field involvement in defining systems needs.

### B. Status

Since final approvals in 1976 to proceed with implementation of the Strategic Plan, the following events have occurred:

- A large scale computer system (hardware and software) has been installed and is operational. The honeywell 66/80 computer system was installed at the SC in March, 1978.
- A telecommunications network has been established Bureauwide. Computer terminals and other peripheral equipment have been installed in State Offices establishing a telecommunications link to the central computer.
- Most field offices possess ADP capability (terminal hookups).
- State Offices have computer capability (Honeywell Level 6).
- Graphics capabilities, including geographic data processing, are under development. Several States have acquired Data General computers for this purpose.
- Definition of requirements studies have been completed for some applications (resource inventory, records applications, some regional analysis, and some case/utilization management).



- The Data Element Dictionary system has been developed, providing data definitions in an automated data dictionary.
- Special application capabilities have been procured and are available for use (e.g. SPSS, BMDP, MATHPACK, REX II, STATPACK, etc.).
- The automated Mining Claims Recordation and Soil Vegetation Inventory Method (SVIM) systems have been implemented and are operational.
- Major system development efforts are underway (examples include land records automation, program management reporting for field managers, and simultaneous oil and gas systems).
- Resource Management Specialists throughout the Bureau are continuing to be introduced to ADP technology.
- Non-ADP, records management capabilities have been developed for use to more effectively manage the Bureau's manual records and files (microfilming).
- A remote sensing capability has been installed and is operational.
- Computer systems which were in use on the old Burroughs computer prior to procurement of the Honeywell computer were converted for temporary use on the Honeywell system pending development of more efficient upgraded replacement systems specifically designed for processing on the H66/80.
- ADP training is made available Bureauwide. This training is in the form of self-paced video tape courses and scheduled computer orientation and training classes which are conducted at the SC, in State Offices, and the Washington Office. Remote sensing training is made available Bureauwide with two or three types of courses available each year.
- Computer system operation and maintenance services and support are being provided.
- A computer chargeback system has been developed and is being implemented.
- Personnel are being exposed more and more to potential uses of information systems technologies. As more knowledge and experience are gained through use of these capabilities, attitudes are changing, people are becoming more comfortable with computer capabilities, and information systems technologies are becoming more accepted.
- An ADP Coordinator Committee has been established with representation made up of personnel at each State Office, BIFC, ESO and the SC. An ADP equipment evaluation committee and data dictionary committee are being established.

### C. Need For An Update

Since 1976, there have been diversions from the Strategic Plan based on critical priority needs. The Federal Land Policy and Management Act of 1976 (FLPMA) required the recordation of mining claims with the BLM. A change in the planned sequence of work was necessary to develop this automated mining claim recordation system. This system, which had been a part of a Land Records Management application, was moved ahead of some planned Resource Inventory application package work. When the Resource Inventory work was resumed, a higher priority was given to rangeland inventory. The Soil Vegetation Inventory Method (SVIM) received this emphasis due to a court action. Time limitations on SVIM development also necessitated some abbreviation for implementation of the Strategic Plan. Since publication of the 1976 document the number of application packages was reduced from fifteen to fourteen with the combination of the Unit Resource Analysis and Resource Inventory packages. Other recent priorities (MBO, elimination of Oil and Gas Leasing Backlogs, further implementation of Automated SIMO Processing) continue to require restructuring of Strategic Plan priorities to meet short term needs. Despite deviations from the 1976 Strategic Plan, many of the original objectives have been accomplished. The 1976 document is, for the most part, still a viable document in most concepts presented. The major concept of total central processing is now replaced to recognize field office computing capability and need. The 1976 document, however, has served its purpose in getting BLM "off the ground and started in the right direction" towards modernizing the Bureau's information handling methods. Much experience, both positive and negative, has been gained since 1976 and much has been learned about the development and use of automated systems. However, there have been no corresponding modifications made to the 1976 Strategic Plan to coincide with changes in priorities or in the information systems environment.

Because of these factors, there is an obvious need to reassess the Bureau's information systems requirements and to realign planning for ADP management, telecommunications, remote sensing/graphics, and records systems for better coordination and control of these information systems activities to more closely coincide with the current functional goals and objectives of BLM.

The BLM Information Systems Steering and Field committees approved the proposed project plan to develop this update. An Application Package Review Team was designated by the Steering Committee to review the priority of development sequence of the application packages as outlined in the 1976 Strategic Plan.

The Application Package Review Team completed review of the priority sequence of the application packages and recommended fourteen to the Steering Committee in the following priority of development sequence:

APPLICATION PACKAGE PRIORITIES

	<u>CURRENT PRIORITY</u>	<u>1976 PRIORITY</u>
Annual Work Planning & Program Management .....	1	10
Accounting and Fund Control .....	1	11
Land Records Management .....	2	3
Case Management .....	2	4
Utilization Management .....	2	5
Resource Inventory (includes Unit Resource Analysis)....	3	1 & 2
Property Control & Management .....	4	14
Resource Management Framework Plan .....	5	6
Program Planning .....	5	7
Regional Analysis .....	5	8
Environmental Report & Environmental Statement Preparation .....	5	9
Protection .....	6	15
Payroll .....	7	12
Manpower & Organization Management .....	7	13

This reprioritization of application package development was approved by the Steering Committee and in February, 1981, the Deputy Director, Management Services directed that an updated Strategic Plan be developed based on this reprioritization.

Additional guidance and direction was provided to the SC by the Steering and Field Committees and by the Division of Information systems (WO 870) for development of the update.

D. How the Update Was Developed

To gain better insight and understanding of the Bureau's perception of the Information Systems program and developments which have taken place since 1976 to implement the Strategic Plan, personnel were interviewed at District, State, Washington Office and SC levels. These interviews were conducted on an informal basis to permit more effective exchange of thoughts and perceptions relative to the information systems program. Most locations voiced similar types of concerns and made comments and observations which culminated in the issues which are discussed in Section V. This update was in part developed using the information gained from conduct of the interviews.

E. Organization Of The Update

The intent of the format arrangement of this document is to provide a logical sequence of events from general discussion (Introduction, Background, and discussion of the current information systems program environment) leading to more specific discussions of Bureauwide perceptions, (Issues) leading finally to proposed remedies (Strategies to Resolve Issues). An Outlook section concludes this document to provide a frame of reference concerning the likelihood that the plan's objectives can be reached within given future time frames, recognizing existing and potential resource constraints (workmonths and dollars).

### III. SIGNIFICANT DIFFERENCES - THE CURRENT PLAN VERSUS THE 1976 PLAN

The 1976 Strategic Plan for Information Systems had no predecessor; therefore, there was no experience level upon which to base that planning effort. Development of the current strategic planning document is based on the fact that a precedent planning document exists and there have been experiences gained during the past six years in implementing this document. Priorities have changed, lessons have been learned and new technologies have been introduced which have contributed to recognition of the need to change the direction of the 1976 document. In all likelihood, annual changes in the BLM environment will lead to corresponding changes in future strategic planning documents. Some basic, fundamental differences between the 1976 document and this document are itemized as follows. These points are discussed in more detail in Sections V and VI.

#### STRATEGIC PLAN DIFFERENCES - 1976 vs 1982

- | <u>1976</u>   | <u>1982</u>   |
|---|---|
| <ul style="list-style-type: none"> <li>- Centralized philosophy of systems development.</li> </ul>  | <ul style="list-style-type: none"> <li>- More decentralized philosophy of systems development with recognition that some degree of centralization is needed for major Bureauwide systems. (Note: ADP system development, including the writing of programs, will continue to be a major SC function. This includes systems developed for downloading to State Office computer capabilities. For the immediate future, States will not have the necessary staffing to design and develop major new systems.</li> </ul> |
| <ul style="list-style-type: none"> <li>- Emphasis on the need for development of large, single, all-encompassing, standardized systems to meet all Bureau locations' needs (large, dynamic integrated types of systems).</li> </ul> | <ul style="list-style-type: none"> <li>- Recognition that many Bureau locations have unique information systems requirements and varied program interests.</li> </ul>   |
| <ul style="list-style-type: none"> <li>- Determination of priority of systems development based solely on the broad Application Package concept.</li> </ul>   | <ul style="list-style-type: none"> <li>- Use of the Development Project Proposal (DPP) process to determine specific, short range objectives and priority of development. Retention of the Application Package concept to determine priority of development of long range goals.</li> </ul>   |



- Lead responsibility for project management and program direction for Strategic Plan implementation assigned to the Washington Office.
- Use of a general long range schedule of tasks (broadly defined) for implementation of Strategic Plan.
- Lead responsibility for project management and implementation of Strategic Plan assigned to the Service Center with policy direction and guidance provided by the Washington Office.
- Use of a specific, short range schedule of tasks (defining deliverables) for implementation of the Strategic Plan.



#### IV. THE INFORMATION SYSTEMS PROGRAM ENVIRONMENT

The Information Systems program involves the gathering and processing of data through manual and automated systems resulting in information which is used for making decisions relative to administration of the public lands. The Information Systems program is itself comprised of four components. These are Automatic Data Processing (ADP) Management, Telecommunications, Remote Sensing/Graphics, and Records Systems. A brief scenario of each of these components follows:

##### A. ADP Management

The ADP management component involves the design, development, test, implementation, and operation and maintenance of automated data processing systems that meet the information needs of the user. ADP services are currently provided by Bureau as well as Non-Bureau sources.

The Bureau's current "in-house" computer capabilities include the Honeywell 66/80 located at the SC, fourteen Honeywell Level 6 minicomputers located throughout the Bureau (primarily at State Offices), six Data General Eclipse minicomputers located throughout the Bureau, a Hewlett Packard (HP-3000) minicomputer and some dedicated microcomputer capabilities.

As mentioned earlier, the 1976 Strategic Plan represented a centralized information systems philosophy. Basically, this means that ADP systems development and operation and maintenance activities take place at a large, centrally located computer facility (with appropriate staff) and field locations have the ability to access this computer through their own terminals. In addition, smaller computers could be provided to field locations to interface with the central site and to accommodate some non-standard, local processing requirements.

This philosophy, for the most part, has been applied in that the Honeywell 66/80 at the SC represents the large system capability. Many field locations (District as well as State Offices) have access to this computer through terminal hookups. The Honeywell Level 6 Systems (located at State Offices for the most part) are minicomputers which are linked to the Honeywell 66/80 central computer. The Data General systems are also minicomputers and are used primarily for provision of mapping/graphics system capabilities. The Hewlett Packard 3000 minicomputer is being used for development and operation of remote sensing capabilities. The Intel microcomputer configuration is dedicated to operation of the Automated Lightning Detection System (ALDS) at the Boise Interagency Fire Center (BIFC).

At present, most of the available computer application systems are processed at the SC on the large, central computer. These systems include applications for aircraft, cadastral survey, financial operations, fire management, forestry, lands, lease management, minerals, property management, range, recreation, Soil Vegetation Inventory Method (SVIM), watershed, and wildlife. There are some special processing capabilities available as well, such as BMDP, SPSS, MATHPACK, and STATPACK (mathematical and statistical packages), and REX II.

In the BLM, there is a trend towards a more decentralized ADP environment where State and District Offices may determine and develop their own information systems needs and priorities using their own personnel and equipment resources. A centralized philosophy may apply in some cases of Bureauwide, standard administrative and resource application ADP systems development, operation and maintenance, but it is evident that the Bureau's mission and resource management needs vary by State and District Office insofar as information systems needs are concerned. This does not mean that there is no longer a place for large, central, standardized systems, but it must also be recognized that field locations have respective unique needs. This trend towards decentralization reflects in part the existence of this autonomy.

#### B. Telecommunications

This component involves the planning, development, and use of telecommunications radio systems and wire communications networks throughout the BLM.

The inventory of telecommunications equipment includes the following:

- Telecommunications radio systems in the western U.S. and Alaska with both mobile and portable radio units.
- Wire communications networks throughout the western U.S.
- Shared, leased or owned Private Automatic Branch Exchanges (PABX), key systems, telephones, business lines (voice and non voice), Wide Area Telecommunications Service (WATS) lines, word processing terminals, teletypes and facsimile machines.

The Telecommunications component also provides communications network support to both ADP and Remote Sensing in the following areas:

- Communication lines for data processing computer equipment to permit transfer of data and information from one location to another.
- Communication lines in support of the Automated Lightning Detection System (ALDS).

It is recognized that greater emphasis is needed on keeping abreast of available technologies which may offer greater savings than current procedures permit. For example, it is known that the cost for providing land circuits continues to rise, but the costs of satellite communications service is dropping. The BLM must pursue changes in technologies and recognize, develop and implement ADP network modernization capabilities to reduce leased-line costs.

This program area has been somewhat neglected by the Bureau in recent years, possibly because of the urgency to integrate automated capabilities in the BLM which received a greater proportion of attention as a result. It is recognized that telecommunications cost effectiveness is now a major issue in the Bureau and greater emphasis must be planned for addressing this issue.

#### C. Remote Sensing/Graphics

This component involves the design, development, and operation of special remote sensing techniques for developing inventories of resources on the public domain. These inventories include such areas as range, forest, wildlife, energy and minerals. The basic premise of the remote sensing program is to be able to accumulate precise information about the extent and condition of environmental ground features without having to physically be at that location. This includes use of ships, aircraft, and satellites to record images via cameras, energy scanners, radars, sonars, and other sensors.

The Bureau's Interactive Digital Image Analysis System (IDIMS) is used for this effort and is located at the DSC. This system is used to process satellite and aircraft data to gather inventory information and to ultimately produce mapping and analytical information for possible resource management decision making. System support activities include the management, operation and maintenance of a hardware/software digital image analysis system.

Continued development and enhancement of this capability is planned. Future developments in this area include creation of software to tie in graphics capabilities to remote sensing data gathering techniques.

The computer graphics activities include the implementation of geographics data entry and analysis capabilities (ADS/MOSS) in BLM state offices. This includes the digitizing of geographic data and the production of graphic output reports.

#### D. Records Systems

This component is concerned with the development, update and evaluation of the Bureau's basic systems for records management, manual and automated. This includes the creation, retention, preservation and disposition activities related to management and control of records in the Bureau. The information Systems program recognizes its role in the management of the Bureau's records as that of a technical advisor, not an initiator or controller of records management activities throughout the Bureau.

Current activities in the Records Systems area include the design, simplification and improvement of land status records keeping systems. Other ongoing services include administration of the BLM Reference Library, publication of the Bureau's Public Land Statistics, provision of Mining Claims Recordation System assistance, and microfilm applications.

The Records Systems management function recognizes the potential impacts of trends towards rising Bureau workloads and shrinking budgets. These conditions call for increased productivity using existing resources indicating that future activities may be aimed at helping the Bureau's offices to cope with staggering paperwork burdens without corresponding large staff increases. Activities which are being planned to assist the Bureau in this endeavor include:

- Implementation of a Bureauwide electronic mail system.
- Development of policy and procedures for Bureauwide word processing systems.
- Implementation of a pilot project for use of microforms as an alternative to the current use of paper in the official personnel files (OPF).
- Evaluation of the Bureau's land status manual record system to determine extent of problems and recommendation of solutions, which streamline, modernize and simplify work.
- Accelerated efforts to complete development of and implement a Bureauwide automated land status record system.
- Elimination of the mining claim recordation backlog, both in the automated and the micrographics systems.
- Conversion of the directives system to a word processing system.
- Application of micrographics technology to more and more activities where potential savings are possible such as engineer drawings and docket operations.
- Application of Optical Mark Reader (OMR) technologies to systems that have a high volume of input data thus reducing labor intensive data entry work.
- Implementation of compatible systems which tie together word processing and telecommunications systems.



## V. ISSUES

Most of the recognized or known problems which currently face the Bureau's information systems program can be categorized into the eleven basic issues discussed in this section. As mentioned in the Introduction, these issues represent Bureauwide perceptions of the information systems program. Some perceptions may not be completely accurate due to lack of awareness of and knowledge about the information systems program. These must nevertheless be addressed as issues because they are perceived problems or observations of the program and accordingly require a remedy or solution of some sort. The resolutions for most of these issues are addressed in Section VI (STRATEGIES TO RESOLVE ISSUES). The issue of level of ADP systems problems and recognized needs (item I below) is probably the most visible issue because customers of ADP services and support are most familiar with the end product and whether or not it is of value to them. There are activities which are currently in progress which address some of the existing ADP systems problems and these are discussed in Section I below as well.

### A. Easy to Use Systems

Manual as well as automated systems must be designed for ease of use. Personnel using automated systems should not be required to be computer technicians to use the system. Specialists in natural resources management, budget analysts, engineers, secretaries and managers should be able to use computerized data and automated capabilities in their work without extensive technical ADP training.

### B. Local Capabilities

Information systems capabilities must be made available to users at their locations. State and District Offices must be permitted to use the information systems program services and capabilities based on their own local needs, priorities and program emphases. This calls for a more decentralized philosophy of information systems development. State and District Offices need computer capabilities, the necessary skills to use them, the procedures for access to computer capabilities, and availability and access to application systems so that they can use the information systems program tools to meet their own needs.

An important part of this issue is the recognition that there is an urgent need for a strong ADP technical staff in the field at each Level-6 computer site. This need must be addressed as each field location establishes and staffs its own Branch of Information Systems.

### C. Standard Versus Nonstandard Systems

1. Development of large, all encompassing, standardized Bureau systems may not be the optimum solution for development of an automated system in all cases. Many Bureau locations have unique information systems requirements or have varied program interests and emphases.



2. Some degree of centralized systems development is a necessity. There are major Bureau application areas which lend themselves to centralized design and development because most or all Bureau locations have the same type of requirements. The Financial Management and Payroll/Personnel systems are examples, although even these systems must bridge the gap between headquarters reporting requirements and differing management needs at the field office level.

D. Contrast in Needs

1. All of the various levels of BLM hierarchy, from operational field activity levels to policy and administration levels, have different information systems needs. This fact must be taken into consideration in the early stages of systems development project planning.
2. Sound ADP systems development practices must be established and enforced to ensure that ADP systems developed and implemented truly meet the needs of all organizational levels for which they were designed.

E. Pursuit of Realistic Goals and Objectives

1. The planning horizon for information systems activities should be short and emphasize attainable goals and be limited to a politically stable time horizon.
2. ADP systems development and implementation activities must be coordinated to deliver planned capabilities to users in a timely manner.

F. Awareness of the Information Systems Program

It is evident that there is a lack of awareness of and knowledge about the information systems program, particularly with regard to progress and status of implementation of the 1976 Strategic Plan and with what types of information systems capabilities are available.

There is a need for ADP training oriented towards the Bureau's Field and Washington Office management levels. It is recognized that this type of training must address the DPP process, the Bureau's current information systems program policies and standard procedures, and latest developments for implementation of the Strategic Plan. This type of training for management personnel throughout the Bureau has been in recent demand and it is anticipated that this demand will rise. Training courses of this nature have been provided to several State Offices and to the Washington Office.

## G. Skills and Training

1. A lack of adequate skills is a problem in successfully implementing or using the information systems program. Many Bureau locations seem to be in a situation where either there is an abundance of computer equipment available but the personnel skill levels to use it are lacking, or there are personnel available who possess the necessary ADP skills but do not know about or have access to automated capabilities now available.
2. It is evident that a shortage of travel funds limits the ability to meet training requirements for information systems capabilities and applications which are available. There is a need to tie student travel funds with the training course funding particularly for contracted courses.

The Bureau's ADP Training Program must respond to Field and Washington Office training needs by developing and presenting tailor-made courses or by serving in a "broker" role to assist Bureauwide locations to procure needed training. This "broker" role may become important as Field Offices establish and staff their respective Information Systems organizations and recognize a need for Level 6 computer system training.

## H. Resistance to Change

1. As an organization begins to rely more and more on information derived from automated systems, there is the possibility that a "resistance to change" tendency may develop. There is a mistrust of the processing logic that creates the resulting information and thus a reluctance to rely on automated data. This philosophy exists to a certain extent in the Bureau.
2. It is possible that BLM personnel who use computer capabilities may be viewed as performing lower skill, menial tasks when using a computer terminal. This situation could discourage use of ADP technology because of the threat to retaining grade classification levels.
3. The "reluctance to change" philosophy must be overcome. New information systems technologies may not be fully taken advantage of because middle and upper level managers may not have been exposed to information systems capabilities, therefore do not fully understand or appreciate the potential value. Newer BLM employees frequently have been exposed to the technology and tend to recognize the use of computers as tools to better accomplish job objectives. The gap between these two viewpoints must be closed. Training for BLM managers may help to alleviate this situation.

## I. ADP Systems Problems and Recognized Needs

1. Current capabilities - It is a common Bureau perception that the information systems program provides useful ADP products and services, but in many cases, the real information systems reporting needs are not met at many Bureau organizational levels - in particular at the State and District Office levels.

Some of the Bureau's major automated systems are viewed as being consistently late and therefore of little value for effective or timely decision making, as too complex and costly to use, as not containing the type of information needed at one organizational level or another, or as being inaccurate to the extent that they are of little or no use. This criticism is heavily oriented to field needs for financial management and budget information.

Response from the central computer is not now adequate to meet increasing demands of field offices and new Bureau priorities for additional major applications. State Office Level 6 computers are underutilized.

Remote Sensing technologies are viewed by some as an operational tool while others consider them as potentially useful, but as not providing the level of detail or ground resolution needed to be a benefit for mapping and classification activities.

For the most part, ADP reports and capabilities are considered as being of little value unless they are accessible by BLM personnel at their locations.

2. Recognized needs:

- Integration of descriptive data to geographic map data in the Land Records Management areas.
- An information system that identifies bottlenecks and provides timely reminders for case management (includes activities for presale, prelease, precontract, prehire, and any preauthorizations) and utilization management (activities for post-sale, post-lease, post-contract and any post-authorizations) activities in the lands and minerals program areas.
- An automated budgeting system in which data can be modified and maintained throughout the process by authorized users in Washington as well as in the field offices.
- An automated system which permits field site access to more current financial data summaries and specific obligation data tracking.
- Development of recreation, use authorization and use monitoring information systems to manage increases in visitor levels in designated scenic river and wilderness areas.

- Geographic data processing and graphics capabilities for resource program and technical services areas including forestry, range, recreation, wildlife, lands and minerals, cadastral survey, engineering, fire and planning. These capabilities should include features that permit local data entry and manipulation and retrieval of output. These services should be accessible from user locations. It is recognized that there is a need for an analysis function in computer graphics to ensure that realistic field needs are addressed in ultimate graphics systems designs.
  - An improved PAY/PERS system. Faster data verification is needed and some personnel reports which had previously been provided are needed but are not produced by the current PAY/PERS system.
  - Use of remote sensing technology (satellite imagery) for general planning applications. This technology may be used for inventory, planning and other analyses.
  - Some special processing needs such as statistical analyses (BMDP and SPSS, for example) road design (including earthwork calculations and progress payments), appraisal and post sale analysis capabilities.
  - Simulation and optimization model processing capabilities for economic impact estimates and timber growth simulation.
  - Word processing capabilities to improve clerical efficiencies, increase speed of report production and revision, and to transfer text files from one word processor to another.
3. Activities in progress to resolve ADP Systems problems - Information systems projects which are currently underway to address some of the ADP systems problems referenced above are as follows:  
(Note: Other ongoing projects which address some of the above problem areas are addressed in current Annual Work Plan Directives.)
- a. Program and Financial Management data for field managers will be addressed in FY83 as specified in an earlier Development Project Proposal (DPP #10 from FY82). The Service Center has been assigned the following tasks for FY83:
- Analyze Field Managers needs.
  - Analyze Budget/Finance needs not being met by the current FM system.
  - Document the current FM system to the extent necessary to permit comparison of user needs against the current system to determine if the current system can meet any or all of such needs.



The principal difference between the above tasks and the initial scope of DPP #10 is that DPP #10 now involves the determination of the management information needs of the field for program management and financial management rather than assuming a redesign of the current FM system.

- b. A computer performance evaluation study was conducted of BLM's central computer system by the Federal Computer Performance Evaluation and Simulation Center (FEDSIM). This study was completed in April, 1982, and recommendations were made to the BLM relative to ways to improve performance levels of the computer system.

Job scheduling and disk allocation studies were also conducted internally by BLM to address potential ways to improve central computer response time to field users and to improve overall processing capability.

The FEDSIM and the BLM studies' results were evaluated and recommendations have been made to the Field and Steering Committees to carry out implementation.

Computer performance evaluation and capacity planning functions have been established at the SC to continue to provide evaluation services such as the above. In addition, telecommunications problems, as encountered, are raised to management levels to ensure timely response to resolve these problems as they occur.

- c. A Level 6 study has been conducted which makes recommendations for downloading automated systems from the central computer site in Denver to the State Office Level 6 mini computer systems.

Based on these recommendations, it is planned that the feasibility to download the Mining claims Recordation System to the State Office Level 6's will be investigated. It is also planned that follow-up studies will be conducted to determine feasibility to download the Range Management Accounting System (RMAS) and the data entry portions of the Oil and Gas system.

- d. Operational remote sensing functions have been merged with development activities in remote sensing, computer graphics, mapping, and related activities to allow concentration of like efforts on resource management priorities and needs.



J. Accessibility of Data

It is evident that an "ownership of data" situation has evolved during the past several years as BLM has become more involved in the use of automated systems technology. It is a common perception that people often have little or no access to their own data once they've submitted it in batch format (via mail) or after having entered it from user locations via computer terminal. Personnel in the field must have the ability to enter and access their own data, especially if State and District Offices are to have financial accountability, and where automated data is not duplicated in accessible manual files at the user site.

Similarly, other Federal agencies, State, County, local government and private parties occasionally have a need for access to BLM automated data just as BLM requires access to data from other agencies (such as in the minerals program area).

K. Establishing Priorities

There is agreement that states should determine information systems priorities in their areas from their own perspectives and considering the more dominant resource programs in the state.

The Development Project Proposal (DPP) process has been established as the means for advancing such priorities to Headquarters for consideration in the Annual Work Planning Process. Approved DPP's dictate the systems and applications that will be designed for placement on BLM computers. The DPP process must become recognized as the mechanism for expressing true information systems needs at all levels of the Bureau's organizational hierarchy. It identifies the specific ADP projects which will be undertaken during one or more fiscal years. These represent the short range objectives needed to reach the ultimate long-range goals currently represented by the 14 application packages. This procedure is discussed in more detail in Section VI.

Most Bureau field locations are adamant that the Bureau's real mission activities are in the Resource Inventory and Planning-Unit Resource Analysis application package areas. Recently, the Annual Work Plan/Accounting and Fund Control application was elevated to a higher priority for ADP systems development attention. It is important to recognize that this change in application package development priority should not be interpreted to mean that all available information systems resources will be assigned to any one effort at a time. The Bureau's true ADP project priorities will be determined through the DPP process and the interaction of the Steering and Field Committees to ensure that actual ADP needs are addressed within the overall framework of the application packages.

## VI. STRATEGIES TO RESOLVE ISSUES

The issues discussed in Section V raised problem areas which must be dealt with before a successful implementation plan and schedule can be developed. The intent of this section is to provide recommended strategies for addressing these key issues. The strategies for implementation of the Strategic Plan as discussed below will serve as the framework or base upon which a corresponding implementation plan and schedule will be developed. We cannot pretend to resolve all issues - we can only identify them and seek means to resolve them.

### A. Management Philosophy

It must be recognized and understood that automated systems and use of computers are not the panacea for solving all problems. The design, development and implementation of automated systems is a time consuming process that requires equal participation of functional field expertise, technical data processing expertise, and middle and upper level management commitment to ensure that the development process is a success.

The management levels throughout the Bureau must become more involved in influencing the direction that information systems development efforts take (through strict adherence to and enforcement of established roles and responsibilities). This does not mean that all levels of Bureau management must drop what they're doing and become intimately involved in the information systems program. It means that there must be sufficient indirect management involvement to influence systems design and development efforts that result in usable, efficient information systems products which take into consideration the issues outlined in Section V.

Associated with this strategy is the fact that the Bureau must assign "program office" ownership for all automated systems. The notion that "ADP" owns and controls the Bureau's systems must be dispelled.

### B. The Broker Function

When a request for support service is received, the "broker function" should recognize that already existing capabilities may be available at other government locations, at non-government locations, from software vendors ("off the shelf" procurement), from currently existing in-house systems which may be modified to meet new requirements, or it may be determined that the capability must be completely developed "from scratch" by BLM. This in-house development from scratch, however, does not necessarily have to be done at the SC. The broker function must recognize that some requirements can and should be "brokered" to other BLM locations (State, District offices, etc.) for design, development and Bureauwide implementation (whether contracted, purchased, or done in-house).

The SC must provide the "broker function" service to act as a central, focal point of contact where organizations Bureauwide can refer their questions regarding information systems support needs. The "broker function" must discourage tendencies to "reinvent the wheel". The existence of already existing systems or other alternatives must be investigated prior to undertaking new systems development projects. Capabilities must be made available to users regardless of where that capability is procured.

The "broker" role extends beyond that of investigating alternative solutions to problems in order to avoid duplicate systems development efforts. Bureauwide ADP training needs must be recognized and appropriate training courses can be developed and presented via the internal BLM ADP Training program or outside BLM sources may be contracted to provide already existing courses.

The ADP training curriculum currently available includes computer assisted instruction courses via the computer Directed Training System (CDTS), video assisted learning courses, an audio assisted instruction course, and various classroom-oriented training courses. These include instruction for REX II, Introduction to Time Sharing, JCL, COBOL Programming, Systems Analysis, Programming Logic/Techniques, and various Honeywell H-6000 specific courses. ADP Coordinators or respective training officers should be contacted for specifics of the available training. There have been several training presentations during FY82 directed towards management level interests. It is expected that these sessions will continue and will include topics such as the DPP process, Strategic Plan implementation progress/status, and other information systems oriented areas of interest to State and WO management personnel.

The point is that the goal for providing information systems support is to make capabilities available to people who need them regardless of where that capability is procured. The "broker function" at the SC must provide that service and eliminate redundant development work.

#### C. Problem Identification and Determination of Workload Priorities

In order that information systems program efforts can be channeled to provide needed capabilities and services in support of the Bureau's mission, a methodology for identifying and prioritizing workloads must be in place. This methodology in the past has been the Work Assignment Record Systems (WARS) process, a procedure no longer used for workload determination at Bureau organizations. The methodology which has been established for developing data processing workloads and priorities is the Development Project Proposal (DPP) process which was initiated during FY 81 to identify and prioritize the FY 82 ADP program workload. This procedure was discussed briefly in Section V.

The DPP process provides a more specific workload and priority identification methodology than is available with the application package concept of the 1976 Strategic Plan. The application package concept represents the Bureau's basic work process groups and prioritizes



these work processes into a sequence for systems development. The DPP process further enhances the application package concept by identifying the Bureau's specific planned projects for the subsequent fiscal year. This methodology is intended to permit more specific, detailed implementation planning and scheduling to take place, it also provides an opportunity to break application packages down to a more manageable size. The direct relationship between development of a system and what Bureau problem is solved as a result is portrayed in the DPP process and use of the systems development life cycle as explained in Section VI-F, Required Structure.

It is important that this process be understood since this is the vehicle for voicing ADP needs Bureauwide. The reader should refer to Instruction Memorandums 81-310 and 81-403 for specific details. It is recognized that there is a need for DPP familiarization or education throughout the Bureau. The DPP process works basically as follows:

- Personnel in locations throughout the Bureau use the DPP format to express their information systems support needs and submit these through local program management channels to the appropriate program office in Washington.
- The DPP's are reviewed and evaluated at the program management levels in Washington and are tentatively approved or disapproved based on current priorities and program emphases.
- The DPP's are then forwarded to the appropriate information systems program management for development of potential costs, work month requirements, and alternative solutions to undertake the project in the information systems environment. This is where the "broker function" discussed earlier must take place.
- The DPP evaluations are then returned to the appropriate Washington program Office for final decisions relative to merit of the DPP based on costs and effort required to undertake the project and the ultimate payback for doing so.
- The DPP's which have progressed through this review and evaluation process are then prioritized into a sequence of development for the upcoming fiscal year and future years when carry-over projects are involved. This prioritization is done with involvement of both the Field and Steering Committees.

It is significant to note that the information systems program management levels of BLM determine neither what the information systems development projects will be for the upcoming fiscal year nor the priority of sequence of development. These decisions are made by the appropriate Washington Program Office and the Field and Steering Committees. This is how the Bureau is able to ensure a direct relationship between development of a system and what Bureau problem is solved as a result. There is a study currently underway to provide the Bureau with a standardized, specific methodology for management and control of the ADP Systems Development Life Cycle. The Life Cycle Management (LCM) study is aimed at providing the checkpoint

procedures for ensuring the direct relationship between an identified problem and the system that is ultimately developed to solve it.

Some field locations have established their own local priority setting groups consisting of representative ADP systems customer personnel. This group considers what information systems capabilities or needs exist and recommends priority of development based on that locations perspective of requirements.

The DPP process provides the vehicle for use of the information systems program as a service to be taken advantage of to assist the Bureau's major program elements to accomplish their goals and objectives. There is a need to establish a feedback mechanism to report periodic progress/status of each year's approved DPP's to keep all Bureau locations informed and up to date regarding major ADP systems development efforts.

Since the DPP process was established to identify and prioritize ADP projects for a given fiscal year, there is a recognized need to develop a similar mechanism for identification and prioritization of research and development projects as well. There is an effort currently underway to develop such a mechanism.

#### D. Organization

The strategies discussed in Sections A-C above reflect the need for a supporting organizational concept to carry out implementation of these strategies.

The key to an adequate supporting organization structure to be able to address the issues and implementation strategies discussed to this point lies in recognition of the need for a formal state office information systems organization and a streamlined Service Center organization that recognizes its role as a service organization.

The information systems environment has changed considerably since development of the 1976 Strategic Plan. The clear trends towards decentralization, the need for a "broker function", the need to recognize data as an important and expensive resource, and the autonomy of Bureau organizations with respect to goals, objectives and priorities are symptoms of the need for a formal state office information systems organization.

A recent BLM study on State Office organizations recognized the need for a formally established ADP organization and recommendations were presented to the Bureau's top management resulting in approval. Recognition of the need for a state office information systems organization is key because this development will permit a decentralized information systems program environment philosophy.

The streamlining of the SC organization to serve in a broker role and to accommodate Bureau information systems needs on a specific project basis (DPP), combined with the establishment of a formal state office information systems organization to accommodate local needs as well as Bureauwide needs when necessary, will provide the necessary



organizational structure for the information systems program to be more responsive to the Bureau's needs and priorities.

Reorganization at the SC resulted in a more streamlined organization. It is intended that this reorganization will better enable the SC to respond to the Bureau's needs not only for information systems services but for other support as well.

ADP functions of the organization were restructured and clarified to achieve a clearer separation of operational, development and management functions, and to achieve a clearer relationship with user groups.

The organization was structured into four elements:

- The Management Support Staff - responsible for planning, standards, budget, training, security and overhead functions.
- Division of Operations - responsible for key entry, computer operations, scheduling functions, the tape library, and software.
- Division of Applications - responsible for computer application systems and maintenance programming. This organization consists of computer programmers and systems analysts.
- Division of Records systems - responsible for micrographics systems, status records systems, records management and library management.

The remote sensing and graphics components of the program were consolidated and were transferred from the Assistant Service Center Director for Data Systems (formerly the Office of Data Systems) to the Assistant Service Center Director for Technical and Scientific Systems (formerly the Office of Technical and Scientific Services).

The Division of Applications was structured to provide automated systems development and maintenance services and support to the Bureau's specific major program areas. Resource Inventory, Land Records, Energy and Minerals, Financial Management and Program Management teams were established to provide this support. In addition, a Level-6 team was established to address the issue of use of the Level-6 computer capabilities throughout the Bureau. A Data Base team is also in this organization structure to provide assistance and services as that technology is needed.

#### E. Roles and Responsibilities

Specific roles and responsibilities must be established before an appropriate action plan and implementation schedule for the above strategies can be developed. These roles and responsibilities must logically tie together the organizational elements which play a part in the administration and use of the information systems program.

1. The Information Systems Steering Committee (re: IM 81-16) - The Steering Committee will continue to exercise oversight responsibility for systems related efforts and will bring to those efforts the appropriate level of management involvement necessary to ensure success. This committee provides Washington Office level guidance on policy matters, scheduling, program impacts, and direction on the development and implementation of information systems technologies. The Steering Committee advises the Directorate on the implementation of the information systems program. Responsibilities of the Steering committee include the following:
  - Serve as advisors to the Associate Director on matters pertaining to priorities, scheduling, and program impacts.
  - Serve as the communications link between the Field Committee, the Deputy Directors, and the Washington Office Division Chiefs.
  - Serve as advisors to the Directorate on policy matters pertaining to information systems needs, development and implementation.
  - Serve as advisors to the Directorate on policy matters pertaining to the acquisition and use of ADP equipment. Serve as the Bureau's Information Systems Executive Review Board.
  - Serve as advisors to the Directorate on policy matters pertaining to the application of remote sensing technology in the Bureau and integration of applications with the Strategic Plan schedules.
  - Serve as advisors to the Directorate on policy matters pertaining to telecommunications capability for data transmission needs and integration of capability with Strategic Plan schedules.
  - Serve as advisors to the Directorate on policy matters pertaining to records systems.
2. The Information Systems Field Committee (re: IM 81-209) - This Committee has been established to provide field advice and leadership for implementation of the Strategic Plan and other programs for information systems management. The Committee provides field level oversight and leadership during all phases of Strategic Plan implementation and other information systems programs and make recommendations to the Information Systems Steering Committee. Responsibilities of the Field Committee are as follows:

- Serve as the communications link between the Steering Committee and the field by aggregating information from areas represented, presenting information and recommendations to the Steering Committee, and disseminating information from the Steering Committee.
  - Review plans and progress at identified management checkpoints in the implementation schedule. Make recommendations to the Steering Committee and project management concerning schedules, priorities and program impacts.
  - Review in detail, as user representatives, specific output products and results produced by teams assigned to various tasks during Strategic Plan implementation. Make recommendations concerning acceptability of products or results.
  - Individual members will chair local field committees as appropriate.
  - Serve as the focal point in the various field offices for contact by project management, core team leaders, or others with responsibility for various phases of Strategic Plan implementation. Coordinate with assigned Team Leaders the activities necessary to complete the various tasks involved in Strategic Plan implementation. Make assignments of personnel from their respective jurisdictions to work groups, except that the Service Center Director will assign personnel from his jurisdiction.
  - Serve as advisors to the Steering Committee on policy matters pertaining to Strategic Plan implementation functions and other information systems programs including data management, remote sensing, telecommunications, and records management.
3. The ADP Coordinator Committee - This committee provides field level technical liaison for information systems ADP related matters. It also serves as the focal point for technical matters involved in the Strategic Plan implementation. ADP Coordinator responsibilities include the following:
- Serve as the State Director's communication line between the WO Division of Information Systems, the Assistant Service Center Director for Data Systems, the Assistant Service Center Director for Technical and Scientific Systems and the field level users in such areas as ADP standards, security, data communications, ADP equipment analysis, planning, ADP equipment installation, systems utilization and adherence to operating standards.
  - Coordinate field level orientation and training programs related to ADP activity.
  - Individual members of the committee act as ADP contacts in each State Office. As such, they coordinate all field level ADP efforts.



- Serve as advisors to the Assistant Service Center Directors for Data Systems and for Technical and Scientific Systems, Field Committee, and Information Systems Steering Committee in the formulation of plans and policies.

The ADP Coordinator functions are critical for successful implementation of the Strategic Plan.

The ADP Coordinator Committee may eventually evolve into an Information Systems Managers Committee or similar type of organization to reflect establishment of Information Systems organization (Branch of Information Systems) at State Office levels throughout the Bureau.

4. Chief, Division of Information Systems - Is responsible for the formulation of Bureauwide policy, Bureauwide program management and coordination, and development of standards and procedures for information systems. The office exercises Bureauwide leadership over the Information Resources Management Program and ensures integration of that program's functions with the Bureau's planning system, programming, budgeting and management processes and related supporting systems and activities. The Information Resources Program consists of automatic data processing and computer related storage and retrieval systems; the records and paperwork management program; telecommunications; and remote sensing and graphics. Many of the current policies for the Bureau's Information systems program are contained in Instruction Memorandums released by the WO Division of Information Systems. An up to date listing of applicable IM's and a brief summary of each is available and is maintained by the WO Division of Information Systems (870).
5. The Director, Denver Service Center - The Director, DSC will be the official contact point to and from the Steering Committee. He will delegate responsibility and authority for accomplishing Strategic Plan implementation to appropriate DSC personnel.

Overall direct project management, execution and control will be the responsibility of the SC Director and the Assistant Service Center Directors. Specific planning, team membership designation, progress monitoring and regular project status reporting will be accomplished within the SC organizational structure. The Assistant Service Center Directors for Data Systems and Technical & Scientific Services will ensure that periodic status/progress reports are prepared and that a project management and control system is instituted to monitor overall progress and status of Strategic Plan implementation projects.

As discussed above, the SC will provide the "broker" and service functions for implementation of the information systems program.

#### F. Required Structure

The structure for carrying out continued implementation of the Strategic Plan consists of the inter-relationship of four basic elements as follows:



1. The fourteen application packages from the Strategic Plan .
2. The Development Project Proposal (DPP) process.
3. Current and projected ADP capabilities.
4. Plans and schedules for accomplishment of goals and objectives.

The fourteen application packages, identified as the Bureau's basic work processes, represent the long range goals for development of new or enhancement of already existing information systems. As explained earlier, these packages represent the Bureau's fundamental work processes.

The DPP process identifies the specific ADP projects which will be undertaken. These projects represent the short range objectives needed to reach the ultimate long range goals. The DPP methodology provides the mechanism for the field to voice ADP systems needs specific to their situations and locations. These are coordinated through the Bureau's Management levels until an agreed upon ADP Systems development workload is established on an annual basis. This workload is made up of new approved DPP's, "carry-over" DPP's from the preceeding fiscal years, and normal operation and maintenance functions.

The DPP process is a way for the Bureau to identify specific problems and to seek appropriate analysis and design of alternative solutions to those problems should they involve the use of ADP technology.

Development of automated systems that meet these long and short range goals and objectives requires identification of the necessary ADP capabilities. These ADP capabilities include but are not limited to the following:

1. Geographic data processing, mapping and graphics.
2. Simulation and optimization modeling.
3. Data base and data management techniques as deemed appropriate.
4. Telecommunications.
5. Remote sensing.
6. Computer assisted training.
7. Special processes (not in the above categories).
8. Equipment and Personnel.

Development of detailed project plans and corresponding implementation schedules are needed to define specifically how these long and short range information systems goals and objectives will be accomplished. Planning and scheduling of activities necessary to develop ADP Systems that meet the identified long and short range

goals and objectives revolves around use of a series of sequential steps called the "Systems Development Life Cycle". These steps include the following:

1. System analysis and detailed user requirements definition.
2. System design.
3. System development and testing.
4. Acceptance testing.
5. System implementation.
6. System operation and maintenance.

Project responsibility and leadership for each DPP project must be pinpointed to establish project control and management and to permit effective channeling of personnel and equipment resources to meet planned goals and objectives in a timely manner.

It is recognized that there may be a gap between the Strategic Plan and the DPP process. There have been suggestions that a 3-4 year planning document is needed to fill this gap and to address projected equipment needs as well. It is anticipated that the Information Systems Planning Document (ISPD) which was discussed briefly in the Introduction, will be helpful in "filling the gap" between the Strategic Plan and the DPP process. An Information Systems Planning Document draft has been developed and it is expected that several more drafts will be required until the final accepted version is developed.

## VII. OUTLOOK

The outlook for accomplishment of information systems goals and objectives is largely dependent upon the Bureau's priority setting processes. While decreases in positions and dollars have significantly impacted information systems there has been a correspondingly sharper definition of priorities. Accordingly some potential computer applications may need to be foregone or implemented in longer time frames in favor of meeting recent Bureau and Departmental priority commitments. This is accepted as the normal course of doing business in a "serious" role, whether it be information systems or any other support function. It is the nature of the information systems business.

In a broader sense, processes have been set in motion and organizations established that are calculated to assure success of strategic plan implementation, specifically:

- A management hierarchy has been established that assures fast exchange of dialogue on information systems issues between the Directorate, the WO Division of Information Systems, the SC, and all field offices.
- A priority setting process is in place that involves all levels of BLM management and allows input from involved technical staffs.
- Information systems program policies, processes and controls are being implemented as developed by the WO Division of Information Systems with support to field offices and the SC.
- The strategic planning process is being refined to provide for response to change on the short term while recognizing long term information systems objectives.
- Washington program office responsibility for systems ownership has been established and role relationships defined.
- Bureau priority projects involving information systems have been identified and are receiving priority attention.
- Major information systems problems have been identified and action is being taken to resolve them using the combined expertise of Bureau and non-Bureau specialists.
- The philosophy of managed ADP independence for the State Offices has been accepted, a State Office information systems organization established, and personnel and equipment commitments considered consistent with local requirements and subject to the constraints of available funding have been made.
- Long and short term equipment needs of the Bureau are being addressed.
- The SC organization has been restructured to combine like functions, allow concentration of effort on Bureau priorities, and establish a business - like environment that will allow fast response to SC information systems clients.
- A "brokering" function is being established at the SC to assure that BLM computing needs are met when SC or field offices are unable to meet such needs.

In summary, the Bureau is moving from a 5 year Strategic Planning process to a more dynamic and responsive approach for identifying and addressing information systems requirements. Information systems program responsibilities are being institutionalized to assure involvement of all levels of management. Policy, procedure, and control processes are in the working. Priorities and major problem areas are being addressed. Information systems programs have in fact, become a part of the Bureau's daily ongoing management activities.

The outlook for meeting information systems goals and objectives is excellent.



## Supplement 1

DESCRIPTION OF APPLICATION PACKAGES

Division of the Bureau workload into manageable groups for purposes of analysis and implementation resulted in the following fourteen application packages.

Resource Inventory and Planning - Unit Resource Analysis

The Resource Inventory package includes the processes of data gathering, storage, analysis, maintenance and statistical, graphic and narrative retrieval for all Bureau managed resources. The URA package includes processes of compiling, maintaining, evaluating, and revising URAs including data collection, summarization, analysis of resource potential, preparation of narratives, tables, maps and overlays.

Land Records Management

The Land Records package includes the processes of data gathering, storage, analysis, maintenance, and statistical, narrative and graphic retrieval of master title, survey and supplemental plats, field notes and associated historical indices.

Case Management

The Case Management package includes the processes of receiving, accounting, recording, docketing, appraising and tracking all case types done in the Bureau. This package will support requirements for data gathering, storage, update, and statistical, narrative and graphic retrieval of case information.

Utilization Management

The Utilization Management package includes the processes of data gathering, storage, analysis, maintenance, statistical and graphic retrieval for compliance checks, contract administration, trespass, billing, reports and record keeping functions.

Planning - Management Framework Plan

The MFP package includes the processes of compiling, maintaining, evaluating and revising Management Framework Plans, including analysis of URA data, resummation, preparation and maintenance of narratives, tables, maps, and overlays.

Program Planning

The Program Planning package includes the processes of developing, maintaining, evaluating and revising all Bureau program plans, specific project plans and associated studies. The package includes analysis of URA and MFP data, additional data gathering and storage requirements, resummation and preparation of narratives, maps and overlays.

## Regional Analysis

The Regional Analysis package includes the processes of analyzing the significance of resource values in place to the market or other clientele they serve. This includes capability to relate resource values in specific areas, and in various levels of aggregation, to the using publics, industries, and economies, in a variety of impacted or related regions. The package includes the processes of data gathering, storage, analysis and manipulation, maintenance and production of tables, narratives, maps and overlays, and reports.

## EAR/EIS Preparation and Publication

The EAR/EIS Preparation and Publication package includes the processes of developing and compiling of environmental impact statements, environmental analysis records or any other environmental analysis or report required prior to a BLM action or project which results in documentation.

## Annual Work Planning and Program Management

The Annual Work Planning and Program Management package includes the processes of data gathering, storage, analysis, maintenance and production of tables and narratives as necessary to support preparation and maintenance of advices, directives, AWP's, operating budget, progress reporting, program monitoring and functional evaluations.

## Accounting and Fund Control

The Accounting and Fund Control package includes the processes of receiving, accounting and disbursement of Bureau funds, expenses and revenues. This package includes financial management in the areas of data recordation, storage, maintenance, summarizations and production of tables and reports to meet various requirements.

## Payroll

The Payroll package includes the processes of data recordation, storage, maintenance, analysis and production of paycheck data, payroll tables and required reports.

## Manpower and Organization Management

The Manpower and Organization Management package includes the processes of manpower planning and utilization and personnel records management in terms of data recordation, storage, summarizations, analysis and production of tables and required reports.

## Property Control and Management

The Property Control and Management package includes the processes of acquiring, maintaining and accounting for Bureau property including structures, facilities, communication systems, equipment, supplies and tools and issuance and movement of tools and equipment. The package includes processes of data recordation, storage, maintenance, summarizations and production of tables and required reports.

### Protection

The Protection package includes the processes of fire management and fire operations in the Bureau in terms of data gathering, recordation, storage, maintenance, analysis and production of tables, maps and overlays.

These application packages allow the Bureau a different way of organizing data and information to meet its needs. Currently ADP systems are developed in response to various specific problems which result in duplication of data and effort and inability of one system to easily share data with another system. The Bureau will have the means, through the Strategic Plan, to develop systems that will support problem solving on a unified basis. For example, the Bureau currently has at least four separate systems to support and track various utilization management processes. These include range utilization, material sales, coal leases and other-than-coal leases. The information available from each is not easily combined for any utilization management statistics or summary reports. Development and implementation of one Utilization Management package, which considers all land use information and process needs, will bring these "bits and pieces" together.





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